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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,175	07/03/2003	Tie Jiang Wu	10112431	4917
34283	7590	10/14/2004	EXAMINER	
QUINTERO LAW OFFICE 1617 BROADWAY, 3RD FLOOR SANTA MONICA, CA 90404			SMOOT, STEPHEN W	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/613,175

Applicant(s)

WU ET AL.

Examiner

Stephen W. Smoot

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to application papers filed on 03 July 2003.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character not mentioned in the description:

110 in Fig. 1.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see page 2, lines 6-8 and page 4, lines 7-8). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

On page 5, line 7, change "106" to --108-- because the isolation layer has been designated by reference number 108 on page 5, line 4;

On page 9, line 18, change "P₁~P₅" to --P₁~P₄-- because the fifth pad is designated as P₅₁ in Fig. 3a; and

On page 10, line 22, change "P₁~P₅" to --P₁~P₄-- because the fifth pad is designated as P₅₁ in Fig. 3a.

Appropriate correction is required.

Claim Objections

4. Claims 5, 12 are objected to because of the following informalities:

In claim 5, line 8, change "scribe line" to --scribe line region-- for proper antecedence to lines 4-5; and

In claim 12, line 2, change "capacitors" to --capacitor-- because the claim is directed to an H-type deep trench capacitor (see claim 5, line 14).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, line 39, the term "the memory regions" is indefinite because it does not particularly point out if it is in reference to the previously set forth "at least one memory region" (in line 5) or the previously set forth "memory cells" (in line 6).

Claim 7 recites the limitation "the bar-type conductive pad area" in lines 3-4.

There is insufficient antecedent basis for this limitation in the claim.

Claims 6-12 are rejected under 35 U.S.C. 112, second paragraph, because they depend on claim 5.

Allowable Subject Matter

7. Claims 1-4 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter: Claims 1-4 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a test device disposed in a scribe line region of a wafer used for detecting alignment of deep trench capacitors and word lines in DRAM devices with vertical transistors, wherein the test device includes an H-type deep trench capacitor disposed in an active area of the scribe line region.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Malhi teaches a DRAM cell that utilizes a vertical transistor with a trench capacitor. Tsuji et al. teach a test structure formed in the scribe line of a semiconductor substrate. Iyer et al. teach a test structure for determining DRAM cell

leakage. Wu et al. teach a test structure that features a deep trench capacitor formed in the scribe line region of a wafer.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00 am to 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SWS

Stephen W. Smoot
Patent Examiner
Art Unit 2813